Meeting of the Group of Experts on Forest Fires in Latin America and the Caribbean III Dialogue - Brasilia, Brazil

MODERATION AND SPEAKERS

The second day of the dialogue focused on the regional and international organisation perspective. Once again, Dr Jesús San-Miguel-Ayanz, leader of the European Forest Fire Information System and Global Wildfire Information System Team of the Joint Research Centre (JRC), moderated the discussions of the second day and followed up with interactive discussions among the delegates.

Regional perspective:

Mr Duarte Oom, Project Officer Global Wildfire Information System, Joint Research Centre, European Commission

International Organisation Perspective:

* Dr Lara Steihl, Forestry Officer (Forest Fire Management) of FAO Rome

AGENDA

- * Activities of regional organizations in 2022 (JRC)
- * Activities of international organizations in 2022 (FAO)
- Group of Experts in Latin America and the Caribbean (GEFF LAC)
 - Discussion and preparation of report on the assessment of damages and impacts of forest fires in 2020-2021
 - Discussion and preparation of annual report on fires in Latin America and Mexico
- Group of Experts in Latin America and the Caribbean (GEFF LAC)
 - Preparation of the GEFF LAC terms of reference
 - Creation of the group of experts
- Forecast of collaborative activities between countries, EU and international organizations (next years).
 - Outline by moderator
 - Seminar registration for World Conference on forest fires
 - Seminar registration with UNDRR in Punta del Este, Uruguay, March 3, 2023
 - Place and date of the 4th GEFF LAC meeting.
- Closing remarks

SESSION 1: INTRODUCTION

INITIATION BY MODERATOR: DR JESÚS SAN-MIGUEL-AYANZ

The second day began with Dr Jesus San-Miguel-Ayanz summarising the previous day's proceedings. The first day was filled with outstanding presentations from all regions, culminating in a visit to ACTO. The moderator made specific reference to the site visits of the previous day. He noted that all participants were impressed and surprised by the state-of-the-art Amazon Observatory.





After the JRC presentation, the Food and Agricultural Organisation presented next. Finally, the moderator stressed the importance of the initiative and invited all interested countries to participate in the discussions.

TECHNICAL SESSION: ACTIVITIES OF INTERNATIONAL ORGANISATIONS

PERSPECTIVE OF JOINT RESEARCH COUNCIL - MR DUARTE OOM, GLOBAL WILDFIRE INFORMATION SYSTEM

The presenter, Mr Duarte Oom, thanked IBAMA and the organisers for hosting the project. The presentation focused on the previously presented topic of Global Wildfire Information Systems but regarding the statistics portal proposed for the Latin America and Caribbean region in 2022.

Mr Oom noted that the primary system consisted of three modules. The first module contained baseline data and fire risk forecasts for nine days from ICMWF. Additionally, there are statistics on anomalies and ranking comparisons dating back 20 years. The presentation also focused on rapid damage assessment, active hotspots, burnt regions and omissions. He also presented the type of data used in the statistics portal.

He next noted that the products used in GWIS include data from VIIRS, MODIS, S-NPP and NOAA. The Real-Time (RT) and Ultra Real Time (URG) differ from minute to minute and second to second. It is currently under testing for inclusion in the GWIS system. However, the system had complications because the information changed during the creation stage. In addition, the presenter stated that the NRT was in the process of being updated.

The presenter also explained the two secured products related to user-technology and the identification of anomalies. The aggregated product is filtered, but because the interest is to use real-time information, the utilisation of the NRT leads to false warnings. Therefore, he explained that there is filtration through three layers of the water layer, NDVI and the footprint for each hotspot. Next, the flames are categorised based on the mask used and gave an example of a false positive, which accounts for about 12 per cent of all detections. He also explained that the cause for false alarms and warnings was gas and industrial platforms.

Regarding fire, he mentioned two products, namely the acclaimed GIOBfire calculated according to MCD 64. Its coverage is up to 500 metres, with a latency period of approximately two to three months. The product is for the specific application of country profiles as it determines the number of fires, the average fire size and the maximum fire spread speed for each country at national and sub-national levels. An indepth technical overview of the system followed.

According to Mr Oom, a wide range of information is available on the number of fires, areas burnt, emissions and seasons. The vector modes can be downloaded, where the NRT generates in real-time. It collects all information on hotspots in time and space and also provides information in real-time and on the fire's progress. He pointed out that there are analogue limitations, but the goal is to get real-time data since it is the foundation for the statistics portal. The system also allows adjusting specific settings and a parallel system helps process the data uploaded to the database. Next, the target is to analyse the geostationary data with a product developed in collaboration with NASA in 15 minutes. Thus, the resolution limitations are undergoing testing. Mr Oom clarified that it was more effective to monitor larger fires.



He next described the situation screen that includes a statistics portal and country profiles that outline the fire routine for each country managed via the GLOBFire. The statistical portal includes long-term fires, weather forecasts, monthly and seasonal rainfall forecasts and other data and service portals. In addition, the two types of data include estimates for each country and real-time seasonal trends. It covers all countries and regions of interest as Latin America, the Caribbean, the Brazilian Amazon and other international borders. Further, the presenter mentioned that Copernicus calculates CO2 emissions that are calculated based on the intensity of the fire. He also mentioned that weekly projections are shown in colour coded lines per year.

Finally, Mr Oom addressed additional information on the Glob Product and NPP VIIRS system. Another statistical provision on burnt regions relates to nations and areas of interest. The Glob product is used annually at 300 metres in large burnt areas. The affected locations are animated to showcase the fire spread. One can observe the number of hotspots, the lines VIIRS shows and the monthly distribution. The data shows that 2020 was a dramatic year, with a 120 per cent increase over the previous year. Other information includes seasonal data, annual forecast forms for all continents, temperatures, and rainfall.

QUESTIONS:	The delegate clarified why burn area graphs and statistics are based on clustering and why were they not based on the MCD 64 as it is not real time.
ANSWER:	The presenter clarified that on the GLOBFire MCD statistics are found in the country profile. The fire regime is characterised by a two-to-three-month latency period. Time is a priority rather than a value and algorithms need to be refined sinceNRT needs to be validated. It is the product used, or at least the way it is built. It is also used in Mexico and California. And the validations in the past years, not 2022, have been very positive. So we have had very satisfactory results in real time
QUESTIONS:	Another delegate clarified as to whether one could determine CO2 emissions per area burned or per region using the data presented.
ANSWER:	Mr Oom responded that the emissions product is based on GlobFire's modest FRP, it is provided by hotspot by region and it works on a sub-national or national level.
QUESTIONS:	This led to further clarification on whether there was possibility to create the product also per area burnt.
ANSWER:	The presented confirmed it was possible.
QUESTIONS:	Another clarification was related to emissions and as to whether the estimation methodology is based on the FRP accessible. Additionally, the clarification on if there is an estimate for biomass in soil and the proportion based on the FRP.
ANSWER:	The presenter clarified it was not possible. It is not provided as Copernicus provides it and since the information is taken from the source and added to the website. The process involves the temporary integration of the FRP and there is a direct correlation between the amount of energy used and the amount of biomass consumed.

PERSPECTIVE OF FOOD AND AGRICULTURAL ORGANISATION - DR LARA STEIL



In her presentation, Dr Lara Steil from Food and Agricultural Organisation (FAO) outlined FAO projects related to integrated fire control and climate change. FAO representation included Dr Steil, Peruvian colleague Peter, who is responsible for Latin American and Caribbean, and Francesco Gaetani from UNEP. Dr Steil explained that FAO and UNEP work to reduce forest fires and climate change, promote community and ecological resilience and support vulnerable populations.

She expressed concern about Sub-Saharan Africa which accounts for 70 per cent of fires worldwide. According to Dr Steil, to tackle forest fires, it is necessary to develop a vision for working with communities, particularly the most vulnerable, and to understand the losses caused by forest fires. It is crucial to determine why forest fires occur, who starts them, where they burn and what damage occurs in the field. To investigate, analyse, adapt and verify the causes of these forest fires, information on forest fires and changes must be available.

As a result, she confirmed that FAO was making a paradigm shift to ensure a comprehensive fire management strategy based on the five Rs. They are revision, analysis, risk reduction, addressing prevention, causes, and damages. She noted that environments with zero fire are not guaranteed, as some ecosystems require fire. Therefore, it was necessary to prepare fire response and recovery strategies. The organisation supports worldwide collaboration, such as the UN effort concentrating on REDD and fire fighting and results-oriented programmes. She further noted that FAO collaborates with Argentina, Chile, and Paraguay on REDD+ programmes addressing integrated fire management.

She further noted that South Korea launched a regional project called AFFIRM, in May 2022, to mitigate the damage and costs caused by forest fires. It will first focus on wildfires and expand to include pests, diseases, and other problems. Another intriguing idea is for FAO and UNDP to collaborate on a worldwide platform for fire management. COFO, FAO's principal statutory institution for the forest sector, has recognised the importance of working on this platform. This platform aims to link all stakeholders by providing risk assessment for fires, early warnings, indigenous and traditional knowledge, gender, equality, diversity, and inclusion, events and publications, and policy development. To construct the platform, FAO collaborates with JRC, the Global Fire Monitoring Centre, regional centres and networks, indigenous networks, and local initiatives. Dr Steil also pointed out that FAO and UNDP work together to create a knowledge hub for integrated fire management. They will discuss issues and harmonise terminology throughout each topic. There are plans to include an information and technical advisory module on the site, where one may search for a community expert, share ideas, and learn from these specialists. Other aspects of advancement include social and economic innovation, strengthening of local activities, community development, and resilient ecosystems. FAO also intends to work with UNEP to establish an Earth observation and fire monitoring system known as SEPAL. Next, she spoke of the international conference on wildfires scheduled in Portugal. In Latin America, she noted that there are various projects, such as the expert group, the South American wildfire regional network, the MOU, the Amazon network for integrated fire management, the Leticia effect, and the establishment of a fund with the UN to support sustainable development in the Amazon.

Finally, Dr Steil outlined other areas of cooperation. FAO is committed to working with partners to support actions that reduce the susceptibility of communities and the environment to forest fires. As mentioned, the related activities incorporate governance and responsibility, knowledge dialogues, gender diversity and inclusion.

SESSION 2 : GROUP OF EXPERTS IN LATIN AMERICA AND MEXICO (GEFF LAC)

DISCUSSION OF PREPARATION OF ANNUAL REPORTS ON FIRES IN LATIN AMERICA AND MEXICO

In the second session, Dr Jesus San-Miguel-Ayanz invited all delegates to participate in the formulation of reports for the region. The moderator thanked all the countries that had contributed with input. He explained that there were two reports in particular. The first assesses the damage and impact of forest fires in 2020-2021 and the second relates to fires in the Latin America and Caribbean region. The publications will be



made available in the three languages of Spanish, English and Portuguese and disseminated because of the project.

Discussions commenced with a focus on the first report, Assessment of damages and impacts of forest fires in 2020-2021. All participants were handed a copy of the EU 2019 report. According to Dr San-Miguel-Ayanz, the report had a positive impact at the EU level. In 2020, three EU Commissioners endorsed it and, now it forms the basis for European policy on fires. He pointed out that the aim of the session was to

- Discuss the structure of the report.
- Incorporate a description of the impact in each country.
- Data provided by each country
- An assessment by each country,
- The group to provide information and initiatives that can be used as inputs for a regional policy.
- Feedback critical to the report
- Importance of revalidating authors to avoid any post-print concerns or regrets.

Key discussion points related to the segment were as follows:

Report: Assessment of damages and impacts of forest fires in 2020-2021

- 1. All delegates agreed to provide any feedback related to the reports within the two-week deadline.
- 2. The moderator noted that the two reports would retain a similar structure. He informed the studies aligned with the research released in October in Europe, allowing everyone to comment and seek advice from professionals. In addition, the team organises a press conference to discuss the results. It would include Latin America, the Caribbean and Mexico. Further, the robust publicity campaign will ensure that all stakeholders receive the report.
- 3. The illegibility of graphs was addressed by delegates and explained by the moderator. He noted that it was impossible to improve quality. The participating countries were requested to review and reproduce the high-resolution graphs for the final report.
- 4. In response to the Uruguay delegate's inquiry about fires and the minimum information requisite, the moderator noted that the information systems are not addressed at this point as it was not urgent. It is scheduled to be published in 2023 and can be reviewed and included at that stage. He further noted that there are national reports which can additionally include regional systems.
- 5. The delegate suggested the inclusion of a description of the Amazon observatory. The idea was to provide a general overview.
- 6. Next, the delegates deliberated on including a list per country in annexe form, incorporating the total numbers. The moderator informed that the European report contained the overall figures for the European Union, Africa, the Middle East and other European nations that are not part of the European Union.
- 7. Another delegate pointed out the difficulty in identifying aggregated figures per theme, for example, the need to identify the aggregated data for prevention in Latin America. As the report segregates per country, it becomes too abstract for the reader. Therefore, the suggestion was to group information according to specific themes and incorporate a section per theme for information systems. The moderator informed that alternate reports produced in February addressed the themes and included risk assessments. The current report included unified information per country. However, he clarified that it depended solely on the group's interest.
- 8. In conclusion, the expert group agreed on the following recommendations and follow-up matters.



- * Incorporation of a list per country and total numbers as an annex in the report
- * As no further questions were raised on the 2021 report, the deadline was set for 2 weeks to provide feedback or modifications.
- * Project office to provide links to previous reports.
- * The team will further work on the translation of the document into three languages.
- * The importance of post-publication to have visibility via print and social media, with press releases and Twitter by the expert group.

Report: Annual Reports on Wildfires

- 1. The moderator outlined the intricacies related to the complex new report. He noted that expert Mr Miguel Seguro was actively involved in report development. Some underlying clarifications were related to the following.
 - 1. The idea to designate one expert to serve as national coordinator in each GEFF LAC country, was put forward.
 - The interest and feasibility related to publishing an annual report. The reports are generally
 published in October, post data collection from different agencies. It is a time-consuming
 process.
 - 2. Next, the moderator presented a summary of the reports produced in Europe. He noted that report-producing commenced in 2000. He further explained that having a focal point per country to organise data streamlined the coordination process. He mentioned that an agenda outlining activities and target dates till publication provides the guideline for all contributors and the preliminary planning meeting held around May.
 - 3. The moderator pointed out that there is a detailed template for the report. The submission deadlines are established based on mutually agreed favourable dates per country. The moderator proposed the months of June or July for GEFF LAC. He explained that the review process takes approximately two months, and each author has to review individual segments. In June, the authorisation process commences as it is an official report. Accordingly, this works out to September.
 - 4. Brazil clarified on the final formatting and inclusion of photographs of report. The moderator noted that the photographs are welcome and that the 2019 European report photograph was from Italy and 2020 from the Netherlands. These were images provided by the countries. He also proposed for the reports to contain information from the region. The study can additionally incorporate images related to fires on the cover, similar to Europe.
 - 5. Dr Steil suggested perhaps incorporating challenges or five lessons learned as it would be interesting to share this among countries in the annual report. Another factor proposed was the number of fires and the areas burnt. Additionally, they standardise by country area to provide an idea of what these figures represent.
 - 6. The delegate from Colombia made suggestions related to information systems. The recommendation was to include an annexe per country, consolidating links. For nations without



- lists, like Colombia, a footnote or a graphic considered in their place. The moderator confirmed it would be interesting to have it consolidated in an annexe.
- 7. The information system report required a final review as images and text were unrelated or isolated. The moderator further clarified that some had contradictions and an example of burnt areas with varying figures and charts. The idea is to provide an improved draft that includes additional information and a review s on the chapters.
- 8. Another delegate noted that the data sequence in the information systems report varied in each country and recommended a unified structure. The moderator explained that the input from each country was unknown at the beginning. Having collated data, a more structured approach will be adapted to each country.
- 9. Ecuador requested a guide indicating the different sections, graphs, maps, and sources to provide guidance in writing the report in uniformity. Dr Jesus confirmed that a basic framework was circulated.
- 10. Ms Latos required clarity on Mr Daniels's proposal. She proposed having a summary of a regional analysis and status on each country. She further reinstated the suggestions made by Ms Lara on three or four specific items to be incorporated. Namely, total area versus area affected by forest fires, the information systems, the performance of each country and a summary analysis of the region.
- 11. The delegate from Colombia inquired about official data usage by the EU and clarified whether something similar done for Latin America. She pointed out that the two-week deadline was very difficult for Colombia. Data must be submitted to the authorities for approval and may require an internal consultation. It may further require the Ministry of Foreign Affairs approval. She inquired if this applied to any other country. The moderator said that the observation was valid and clarified that in Europe, the national representatives published data in the reports for the region and country. The Ministry of Foreign Affairs must be kept informed. However, he re-iterated that the study was not a legal publication. Instead, it is a compilation by countries allowing for expert comparison.
 - * An agenda to be developed outlining activities and target dates until publication. The dates should be established for each country on submission deadlines. The recommendation on aligning to month of June was acceptable to certain countries.
 - * Countries wishing to submit additional photographs must submit within the 2 week deadline.
 - * The inclusion of a summary of links to the information systems in Annex format per-country.
 - * A final review by countries on images within information systems report and submission of correct wording.
 - * The Information Systems report to be unified and the adaptation of structured approach for each country.
 - * The submission of a proposal and a detailed template as proposed by Ecuador
 - * As proposed by Ms Latos the inclusion of proposed segments within the report.
 - * To have a focal point per country to coordinate with the other organisations
 - * To organise a meeting of key contacts at the beginning of 2023.

SESSION 2: GROUP OF EXPERTS IN LATIN AMERICA AND MEXICO (GEFF LAC)



TECHNICAL SESSION: TERMS OF REFERENCE, COMPOSITION; WORKING GROUPS AND LEADERSHIP

Dr Jesus San-Miguel-Ayanz commenced the next session by outlining three key points. Namely

- 1. The preparation of the terms of reference
- 2. The creation of a group of experts
- 3. Organise the working groups

He noted that the discussion was related to another session that would follow later. The working group will carry out activities bearing this segment in mind.

TERMS OF REFERENCE OUTLINE: BY DR JESÚS SAN-MIGUEL-AYANZ

The session commenced with Dr Jesus San-Miguel-Ayanz giving a brief outline of the short four paged Terms of Reference. He noted that two copies were circulated previously and consisted of the original and the edited version. The TOR follows the EU expert group version, with changes adapted for the expert group in Latin America. Next, the moderator outlined the salient points within the Terms of Reference.

- Some aspects did not apply to Latin America and the Caribbean, as they are related to European regulations.
- The group operations and horizontal rules would apply to the GEFF LAC groups.
- The terms of reference establish the group that is not under any political umbrella or structure.
- The group objective was to provide information to start that initiative and advice for parties that require additional information or advice about fires or fire management in Latin America in the Caribbean.
- The Terms of Reference are established and used by the group. It allows for changes through a vote. Each point will be reviewed closely for suggestions or comments to form a consensus.
- The moderator clarified that one does not need to worry about future changes to the TOR. It is a flexible document that is adaptable. However, it is critical to reaching a consensus, make necessary changes and establish the base.
- He pointed out that the second document was the original TOR for the European expert group.
 Seven countries were part of the original document created in 1998. Though the TOR was not active, it established the foundation for members to join. The authorities and the ministries of each country carry out the appointment of experts.
- In addition, no expert can join independently. These were the basic ground rules in the TOR.
- Another salient feature t is that the European expert group has a registry of who joined the group and who is in the group. It provided for an individual expert per country or 10. There is no limitation. The important matter was to be authorised by the local authorities to represent the country.
- Another feature was that from the technical perspective, expert appointments refrain from political intervention. However, they are authorised to participate, but. when the experts speak, it is not from a country's political standpoint but from a technical perspective, which allows experts to communicate.
- The group thus deliberated and edited the content.

TERMS OF REFERENCE: KEY DISCUSSION POINTS

SECTION 1, BACKGROUND - 1st Paragraph

1. The moderator noted that the document was in English and required adaptation to the primary languages in the region.



- 2. The suggestion was to reword the expert group as 'fire management' instead of wildfire, as it contained prescribed burns and controlled burns.
- 3. The moderator noted that burn is a regional system. The idea is that the support group works with the regional systems. Modify the wording 'Supporting international organisations and activities related to the development of the global system. to: other regional systems not only the global system
- 4. The moderator clarified if it was too bold to go beyond wildfires. Hence consider the change of expert group name. Instead of forest fires, simply the group theoretically is about forest fires because of the purpose. The acronym for the group should be easily translatable. It should reflect what has been done in Europe and It can be incorporated without changing the acronym for the group, in Spanish and English. Modify to: Expert group on integrated fire management instead of forest fires
- 5. The delegate noted that the most important aspect of the appointment in the first paragraph was eliminated. Modify to: Incorporate a text about the appointment of membership in the membership section.

SECTION 1, BACKGROUND - 2nd & 3rd Paragraph

- 1. Dr San-Miguel-Ayanz proposed to incorporate Alejandro's suggestion into the activities of the group. It additionally suggested to include that the group will promote the use of new technologies for monitoring in all the phases of the analysis. It was important to reformulate the sentence while retaining the idea in a single paragraph. Modify to include: the use of geospatial data in wildfires and additionally incorporate new technologies for monitoring wildfires.
- 2. About membership and other institutions and reduction of disaster risks, perhaps to incorporate other institutions with a mandate in Disaster Reduction. It was noted that NGOs for instance might be very active but they are not recognised institutionally. It was agreed to be included within point 4, in the membership section. Modify to include: Other institutions that have the mandate to reduce risks (Section 4 Membership)
- 3. It was suggested that the of wording forest fires should be adapted to wildfires. The moderator noted that in the European system, one can't change the acronym but it is wildfire. Many countries have fires that are not forest fires. The focus of the group is prevention. The first line of defence is unacceptable as an example otherwise. Modify to: Wildfires

SECTION 2, TASKS

- 1. It was noted that the idea of the group is to provide support to organisations that work at a political level. This could be extended. The moderator, therefore, queried if there was interest to include the countries. Namely, supporting organisations working in the scope or area of wildfires and preparation of proposals for projects or proposals. Modify to include: the countries
- 2. Dr Steil mentioned that it was generally, the reverse at FAO. The UN supports countries so that they will develop proposals.
- 3. Dr San-Miguel-Ayanz noted that if a country has an idea for a policy regarding fires the expert group can provide support. It can be a proposal by a country or by several countries. The need can be related to fires or climate change. The importance was that the relevant country would have support from the group. Modify to include: with support from European Union and international organisations such as UNEP and regional organisations like ACTO at the end of a point.
- 4. According to FAO, In 2020 with the extensive fires in South America, the representatives of the UN in host countries received requests for support to improve the system. It was therefore noted that generally, it's the countries that request support. The moderator agreed, however, and clarified that this was related to the activities of the group and not the UN activities or the EU activities.



- 5. FAO outlined that the group was key to organising a sub-national initiative, which can result in requests for support from the UN. This will receive support from countries that face the same problem leading to the formulation of proposals.
- 6. The moderator once again clarified that these were two different aspects. The proposals from the countries to request support from international organisations, the other relates to policy initiatives where the group can have support from the EU or other international organisations. He, therefore, pointed out that both can be included as it was important.
- 7. From the delegate's perspective, there was an agreement for both options. As the advisory group can propose and it can also receive information about all possible international initiatives, it was pointed out that sometimes depending on the organisation the project proposals originate from some national institutions which usually do not work directly with fires. The example of Forest Management was shared where some organisations work under the Ministry of Agriculture and others under the Ministry of Environment. In such instances, sometimes the information doesn't reach the technical groups. Therefore, it was suggested that the group should also receive information. Hence the delegate agreed with the two-way communication. The moderator noted that it can be drafted later but it should be included. The group sends requests to international organisations and vice versa. Therefore, the group should be identified as a point of contact with these international organisations. Modify to include: The group sending requests to international organisations and vice versa. (Pending)
- 8. Under sub-points 1 and 3, it was pointed out that Integrated Fire Management should be specified.
- 9. Colombia noted that when one refers to risk management, it includes knowledge monitoring, identification of risk conditions analysis, and risk analysis. This is the following stage which includes the prevention and mitigation of wildfires. She further noted that in management there is the inclusion of preparation for responses, and preparation for recovery as well. The document focuses a lot on prevention and monitoring. However, it is important to address capacity building. The delegate pointed out that it was unclear if this is t included in the document. Therefore she clarified if it would address the stages, knowledge and prevention management.
- 10. Another delegate proposed that the solution could be to have Integrated fire management that includes all the elements mentioned by Dr Steil. In Latin America, the traditional focus was on fire management or fire preparation and suppression and hence the reason for the change. Instead of fire management, the reference was to integrated fire management including all of the elements. The moderator agreed that though it was slightly redundant, there was no problem in incorporating the point. Modify to include: Integrated fire management including all of the elements.
- 11. There was clarification as to how the expert group would interact with other global groups that are addressing fire. Was there any type of interaction policy? There was doubt about how to integrate the efforts. FAO pointed out it's very important to have these exchanges with other regions, which is what is proposed via the platform. The platform was not included at this juncture, as it is not developed yet. She noted that it was important to interact with other regions and this will happen through the platform and hub in the future. The moderator acknowledged the proposal and thanked FAO. Modify to include: It could state that the group promotes the use of new technologies and integration with other groups that work on this topic globally.

SECTION 3, CONSULTATIONS

1. Dr Jesus explained the European concept. Each nation in Europe has its expert panel. However, any country is free to consult with the organisation. It does not have to be solely an international organisation since any country can participate. He further pointed out that if it is left open for anybody to consult the group, one must consider how the consultation would take place through the secretariat. It adds another layer of complexity. Therefore, the proposal was to commence operations as the foundation is ready and to retain the original wording. If something becomes overly complex, it may be altered afterwards. Modify to include: Integrated fire management.



SECTION 4, MEMBERSHIP

1. It was noted that third-country authorities are specific to Europe. Modify to exclude: Third-country and include Member Countries' representatives.

SECTION 5, CHAIR

1. It was clarified that in the beginning, the group will have a secretariat, with FAO and the European Union in charge of organising meetings and preparing documents. A preliminary phase and depending on how the group develops, it may self-manage and choose a chair among nations. It was noted, that the Chair can be rotated per country, but practical constraints related to transfer of documentation required consideration.

SECTION 6, MEETINGS

- 1. It was noted that the meetings will be held online, and the next one is set for Puerto Rico. It may also occur outside of Latin America. Previously, it was held in Chile, but the option was left open. Modify to: It will take place in one of the nations that have agreed to participate.
- 2. It was further pointed out that the European Union and FAO will be the acting secretariat. It was mainly to facilitate any constraints and provide flexibility for external meeting invitees.
- 3. Next, the moderator noted that point 4 states. It was expressed that in agreement with the chairs, the group by a simple majority may deliberate if the meetings shall be public. He addressed the need for flexibility. Modify to include: on an ad-hoc basis if a meeting is conducted, in which the topic discussed cannot be made public then this should be reflected as well.
- 4. It was noted that other points under section 6 were standard procedures.
- 5. Addressing the voting clause, he pointed out that it may not be necessary to have voting procedure. It was originally incorporated in the terms of reference and hence reflected. He clarified on the need to maintain the votes. While problems are not foreseen, in the event the expert group must vote, then rules are in place. In the event the group wishes to make a joint proposal in a specific area of climate change ,for instance and it can be voted on, based on proposals.
- 6. One of the delegates clarified the role of FAO and JRC in the group. The moderator confirmed that FAO and the European Union will chair the group and it is incorporated in the document. The chair is in charge of managing the meetings

SECTION 7, SUB-GROUPS

1. It was confirmed that subgroups could be established.

SECTION 8, INVITED EXPERTS

- 1. It was noted that in the European expert group when there are research projects that are of interest to the group, research coordinators are invited to participate and answer questions.
- The moderator also informed that the invited experts' segment was for delegates from nations that
 are not members of the European Union but are considered observers when they attend meetings.
 Hence included but not required in this scenario. Modify to exclude: Removal of the segment in
 total

SECTION 9, OBSERVERS

1. FAO clarified as to whether UNEP was included. The moderator pointed out that the paper must be evaluated since too many changes had been made. However, because this is a separate expert group,



the regulations can be established. They are observers in Europe since they are not member nations and hence cannot be formal members of the expert group. Universities are also observers. He noted that FAO and the UN were mentioned at the beginning since International organisations are members of the group but not observers. In the case of institutions and some government agencies, there is no provision for inviting them. These agencies are invited when the group needs to use their data.. Universities have not been included in the expert group as this would lead to the participation of over 100 people. There may be research groups that are voted on or dealt with by consensus within the expert group.

SECTION 10, RULES AND PROCEDURES

1. No additional comments were outlined in this section.

SECTION 11, PROFESSIONAL SECRECY & HANDLING CLASSIFIED INFORMATION

- 1. It was noted the superscript and related footnote pertaining to Article 17 on horizontal rules was not applicable. Modify to exclude: Removal of the segment in total
- 2. In tackling the Use of Classified information segment and strike words, the moderator noted that the text and language are subject to European Commission guidelines, but a substitute paragraph can be included. The objective was to collaborate on prevention, fire prevention, and management, and that it should be a tool for future conversation that includes some accountability. The goal is to create a trusting environment. He further detailed that it was about the accountability of each staff member's responsibilities. Information that might be considered sensitive. When discussing technical knowledge in a burnt-out region, the notion is that information diffused because of the group's work on technique. This was mainly because one does not wish to harm the countries. Therefore, it may be reworded differently. Modify to exclude: the title to be adapted with technical wording that is restricted. It needs to be technical, not a legal issue that can have some sort of punishment.
- 3. Uruguay inquired on the nominations of individual countries in terms of type of personnel and institutions. He noted the ministries might designate a district. In response, the moderator clarified that in certain nations, officials in general are potentially the representatives of all, rather than solely the Ministry of Foreign Affairs or a specialised organisation. It is open for the country to nominate from its own pool of specialists. Uruguay agreed that GEFF LAC should comprise solely of technical experts in the group. If a country needs to manage in the best way, each country should be able to do so. But in the case of Uruguay it would be complicated to restrict this.
- 4. Once again Dr Jesus affirmed that it was important for the specialists in the group to speak as experts and not as representatives of the country. The specialists stressed the importance of the criteria that it is a technical organisation and not a political one, speaking as authorities.
- 5. The FAO expert drew parallels in a similar organisation where it was accommodated. An authority or national government needed to appoint someone with a letter of authorisation signed by a minister. An appointment of this nature is viewed as a representation, not an expert, and the situation is rather complicated.
- 6. The moderator highlighted that the GEFF LAC group is an expert group. They would not represent the government, which avoids political issues.

SECTION 12, TRANSPARENCY

1. The group was made aware of the Transparency register within the European Union, where the group of specialists is registered. He noted that it was irrelevant to the GEFF LAC expert group as there is no registry for the region. However, he raised the importance of the sort of information shared inside the expert group. The expert's name and the organisation's name should be included as it is very much connected to personal data regulation. It is a basic registry of specialists. It was further noted, that the



repository should include group information such as meeting minutes and shared papers. Everything should be recorded in a register and made available to members. It is critical to have this so that all specialists may access information, and the records will be made available to everyone on the register. Modify to exclude from the point of Exception.

SECTION 13, MEETING EXPENSES

1. The moderator informed that the section - Meeting Expenses was based on the European Union context where the European Union funded the initiatives. Hence it was not relevant to the group

ADDITIONAL COMMENTS

- 1. The delegate noted the importance of defining what is considered Integrated Fire Management. In addition to consider defining the technical staff that will work with wildfires.
- In response, the moderator said, based on what was mentioned, the word experts may have different connotations in different countries. It can define who will be the technical experts or the technical staff that work with wildfires. Accordingly, it was reiterated that the GEFF LAC group is a technical team of experts.
- 3. The Need for a Glossary: The need for a glossary was noted and identified as important. It provides countries with an opportunity to work together on terminology. These terms are mentioned in the memorandum of understanding. It was further expressed that the Amazon countries have extensive experience with integrated fire management. The related list may be added or evaluated for inclusion. It was proposed that each country agrees on the terms and that all countries might be incorporated into an Annex. It was further proposed for the addition of a glossary with three or four concepts, followed by a country review and appropriate incorporation and adaptation.
 - * Section 1, Paragraph 1: Translation of documents to Spanish and Portuguese
 - * Additional Comments 2 : The moderator requested the submission of a proposal , which will be distributed amongst the expert group.
 - * Additional Comments 3: The moderator requested the submission of a proposal for glossary. The group does not want a joint project of a glossary. Instead, 3 or 4 concepts of joint definitions. The following meeting's theme was to focus on the creation of a glossary, to develop an appendix with definitions. If a country does not agree with the definition, they will designate the expert according to their own notion. The aim is to keep broad notions in place so that every country feels involved.

SESSION 3 : FORECAST OF COOPERATION ACTIVITIES BY GROUP OF EXPERTS IN LATIN AMERICA AND MEXICO (GEFF LAC)

OUTLINE BY MODERATOR: DR JESÚS SAN-MIGUEL-AYANZ

The afternoon session began with an overview of prospective areas for collaboration. The previous meeting yielded a guideline of key topics addressed throughout the meeting. Namely,

- Prevention, mitigation and preparedness
- Early warning systems
- Use of remote sensors
- Collaboration in information systems on fires
- Processing of data and standardising the products and outputs





- Analyses of fires and prevention and planning for prevention
- Interface between natural zones and urban zones

The moderator noted that the definition of 'prevention' required clarity on whether prevention includes preparedness. Prevention partially involves mitigation and additionally, there is no distinction between prevention and mitigation. Further, a glossary is required.

The expert group also needed a deeper understanding of elements within early warning systems, risk assessment, indices or risk quotas, or to alternately identify the active hotspots.

He further informed on the third area that Argentina, Mexico and other countries had pointed out was remote sensing and cooperation on fire information systems. The next step is establishing the standards for information systems or exchange information. Mr Alexandrou agreed on exchanging satellite images between countries as most countries use data extracted from NASA, MODIS and Sentinel.

Another area where cooperation was possible is the data processing and standardisation of products and results in hazard calculations. He noted that each country could contribute by using different hazard indices.

Another topic proposed was fuel mapping which Mexico and Chile had already produced. At the global level, Dr San Miguel Ayanz noted that countries face similar problems with fuel mapping. A fuel map produced in Europe outlined that its coverage varied every year. Thus, it was an issue worth collaborating on. It is additionally about fire assessment and prevention, as well as preventive planning and the interface between natural and urban areas.

Next, relating to the morning session, the decision was to hold two meetings each year, one in person and one online. In addition, the recommendation was to organise a workshop on risk exposure, review the products created in each locality and prioritise before proceeding with future planning. The proposed date was August 2023. However, it could be pushed back to the end of the year to coincide with Amazon's efforts, which will last until 2028.

Another consideration was the possibility of holding a technical symposium on early warning systems. He noted that it could coincide with the Uruguay Summit UN, which will be held in collaboration with FAO and UNEP from 28 Feb. to 2 March. A

member of the organising committee confirmed the meeting. The day before, the 27th, a conference is scheduled to discuss the issue of early warning with all the directors of meteorological agencies and civil protection organisations.

Therefore, the idea of organising a technical event lasting the whole day was considered. It would be suitable because the platform will be active, which makes it even more interesting. Dr San Miguel Ayanz noted that the technical event will be attended by only two specialists in prevention and early warning systems from each nation, with the aim of harmonising early warning systems.

OUTLINE OF WORLD CONFERENCE ON FOREST FIRES

Dr Lara *Steil* gave an insight into the technical conference, which will take place from 16 to 19 May. UNEP is organising the event in partnership with the 23 organising committees on forest fires. There will be a networking event the day before. The World Conference on Forest Fires, which takes place every four or five years, brings together scientists, researchers, fire service members and community residents. In 2019, Prevfogo in Brazil organised the event and community leaders gave presentations. It made the event more diverse and richer. She further noted that instead of a complete expert group, the proposal is to hold a technical meeting with two prevention and early warning system specialists from each country. There will also be deliberations and reflection on harmonising the early warning systems.



Comments by Moderator: The moderator confirmed that the meeting was not scientific but professional. Typically, the event displays a variety of fire-related materials. The conference organisers are pleased to host the meeting and are eager to learn more about the Incident Command System that was previously in South America. A discussion is underway to identify the possibility of a meeting with the European expert group and the objective is to increase communication and contact between the European and Latin American groups by combining the two events. However, this is still under consideration. Both events are technical and scheduled for 20 May 2023. Ms Simona Obreja then gave further insights into logistics.

Comments by Ms Simona Obreja: In both Uruguay and Porto, there will be a full day of meetings with the expert group, followed by two days of participation in other sessions within the main events. Mr Obreja mentioned 1000 experts scheduled to attend from the United States, Africa, Europe, Portugal and Uruguay. She noted that 600 had already confirmed participation. Therefore, it was vital to appoint a national representative for the event as soon as possible. She further addressed the logistical constraints of hotel reservations. There are only a limited number of rooms available. In addition, participants should ensure to meet the registration.

Comments by Dr Lara Steil: Dr Steil noted that there is limited funding to support the entire event in Portugal. She recommended confirming tickets and booking directly after the two events.

Comments by Ms Simona Obreja: Ms Obreja confirmed Ms Steil's statement. She recommended participants review the main event's agendas alongside targeted meetings. Many programmes will take place concurrently. Therefore, delegates would not be able to attend all. The organisers hope to maintain the ratio of two or three participants per nation. However, for the conference and Portugal, the plan is for all specialists to attend and continue the activities.

Comments by FAO: The expert from FAO mentioned that the event had also gained popularity on the internet. It was founded and organised by UNDRR, a UN office that works to reduce disaster risk. The platform covers more than just fires. Hence, the profile of participants will be slightly different from previous meetings.

FORECAST OF COOPERATION ACTIVITIES BY GEFF LAC

The moderator clarified if it was possible to organise a session on remote sensors for fires as part of the list of priorities and related programmes proposed in the thematic areas. He noted that representatives of many nations can participate in the meeting, and it can be virtual or face-to-face. Another meeting could be planned to discuss common problems with flames and borders. In addition, a conference on preventive and early warning systems will be held in March. Once the list of participants is finalised, a presentation will be given on the progress. An agenda will be prepared to ensure a productive meeting and the topics of the meeting can be tailored to the priorities of the delegates.

Key Discussion Points: Forecast of Cooperation Activities GEFF LAC

- Concern was raised by a delegate to establish the context of each proposed topic. The example provided on unfamiliar topics of the danger indexes and the early warning systems. Before the finalisation of topics, the importance of internal discussions on topics was stressed.
- 2. The delegate identified the lack of clarity in terms of what is considered an early warning system. What exactly does that entail, as the early warning system relates to distant sensors for monitoring? It was therefore clarified if it was the same topic or two themes.
- 3. Colombia confirmed its interest in stages, forecasts, and clarity in definitions. She exchanged views that it was important information for municipalities and departments to record real-time detection of forest fires, as is the management of hotspots. The work in Amazon has enabled combatting hotspots. However, forecasting and monitoring fire scars are crucial. After the fire, the damaged area is inspected, and a report is prepared. The aim is to minimise the number of people affected to 80 per cent. The areas must also be specified. It was noted that if there were an agreement, the Colombian plan would therefore include early warning systems and forest fire detection and monitoring. Colombia has also decided to



set up a technology module to monitor sensitive ecosystems. Therefore, she stressed the value of learning what other countries do.

- 4. The moderator confirmed the presentation in Peru was highly fascinating since it served as a warning. It may serve as a warning before the fire begins. It can also be integrated with other types of information location coverage. He identified that all varying mechanisms would be beneficial.
- 5. In support of what Colombia said, it was reaffirmed that it is critical to clarify information. The hazard index is based on fire danger, and it is an important tool for early warning. It may help nations to proceed with the systems and learn lessons. In addition, countries that have not yet begun the process.
- 6. It was noted that the early warning system model for flames is not the material logical model. Instead, it relates to the fuel capacity. Because the fire is propagated by vegetation, it is all tied to the dampness of the fuel. It was therefore critical that a fuel model must be as thorough as possible so that the country can implement the model. In addition, it was proposed that a technical discussion around the topic should be incorporated. He pointed out Paraguay model was related to risk mapping and identifying vulnerabilities, exposure, and dangers. Follow up: Technical discussion on Fuel capacity models.
- 7. The moderator addressed the topic of the outlook of prevention in each country. He addressed the misunderstanding between readiness and prevention. He noted that predicting is not the same as previewing, preparation, or prognosis. In general, these occurrences induced by human activity may be worked on to improve prevention and preparation. Various countries' approaches to prevention may be completely reasonable.
- 8. The delegate was in favour of the recommendations made by Colombia and Uruguay. He addressed the linkage with communities since communities should be able to use the information to control respective territories and fires. In addition, he questioned how firefighter's risk management units, could utilise these alerts. Therefore, he noted the importance to address the facts of the identification of scars, where alerts are meant for action and the organisations that utilise these alerts and warnings based on the tools.
- 9. It was proposed that a date should be set for countries that currently have an early warning system to submit the methodology and data they utilise. The moderator noted that it might be too abstract right now and a more objective plan might be established later. Follow up: Submission of methodology and data utilised by an established date.
- 10. It was proposed that the scheduled meeting in the first quarter of 2023 can be dedicated to early warning systems, allowing countries that already have an early warning system to present to the other countries and disseminated it among the countries. Whilst in the same region, it's a very varied region. The moderator noted that the event could identify lessons learned that can be adapted by other countries. It was proposed that a meeting on the 3rd of March could be considered to further examine these topics. Follow up: Early warning system and tools as hazard index to be incorporated. Lessons learned by implementing countries to other countries.
- 11. A suggestion was raised about the theme of prevention, as well as the notion of integrated fire management. Considering the group of specialists and the usage of the term "prevention" in the broadest sense feasible. It could consider containing characteristics as described by Bolivia, such as environmental education and community work. Countries, where prevention encompasses readiness and reaction, should be included as well. It was proposed that all aspects could be addressed within the context of prevention. It was further agreed that each country is free to choose the preventative concept that best suits its needs.
- 12. Another critical element addressed was on preventive measures to incorporate educating and raising awareness. Dr Steil agreed that there must be awareness of what causes wildfires, to create a campaign or an environmental education approach that focuses on the causes of wildfires. The difficulties that exist in each site must be identified. A general election campaign may provide favourable outcomes, but it is less effective. FAO seeks to spread this message, as addressed in the presentation



on the five Rs. The first arm was identified as review and analysis; identify and address the root causes. Followed by analysis and comprehension of the related factors.

13. It was clear that the issues were identified as significant. Hence the moderator confirmed that emphasis will be placed on preventive and early warning systems. Additionally, linked to the risk index. Follow up: Prevention and its context to be addressed.

Key Discussion Points: Information systems and the use of tele detection for fires

- 1. The moderator stressed that the utilisation of information systems and tele-detection for fires is a problem addressed by all countries. It was therefore suggested that the issue could be scheduled at a separate session between May and December. Another subject proposed was the calculation of the risk index, which included static variables. Yearly averages are typically utilised. He noted that JRC had created a fire risk index for Europe, which may be explained along with a risk assessment for the entire continent. There was interest to evolve on a global scale. However, doing it, especially for a broad region such as the LAC region would be beneficial. The risk index would also include the WUI, or Wild land Urban Interface because it involves population vulnerability and exposure and is therefore closely aligned to the risk index. Follow up: A second session on fire tele-detection can be scheduled.
- 2. Next, the misunderstanding concerning terminology and capacity building was addressed. It was proposed that an action plan should be developed with activities that are realistic for the group. It was noted that response preparation involves reduction preventive and mitigation planning. The first action was described, but prevention also includes numerous others. A plan containing timelines and dates outlining what can and cannot be accomplished in a single year is needed. Follow up: Following an analysis of what has been done, it is recommended that an action plan should be developed with activities that are realistic for the group.
- 3. The purpose of the day's session was to decide on the themes. The goal is to have a plan of action or a work plan. The moderator confirmed that the short-term plan was currently under review. In particular, the ongoing meeting was based on previous meetings' findings. The meeting identified listing the needs of each country they wished to be addressed. Follow up: An evaluation of the mentioned priorities should be conducted, for the group to determine how gaps between nations might be closed.
- 4. It was suggested to consider initiatives on a regional scale, as each country had its own set of issues. Though there is institutional support, further input from fire departments is required. There must be an effort to build procedures to facilitate knowledge transfer in all aspects of risk management. He noted that in comparison some firemen have a budget of \$40 million, while others have a yearly spending limit of \$5,000. Risk management involves analysis, planning, contingency plans and all of the risk management components. There is an identified need to increase capacity in suppression, firemen, and other nations that cooperate with community firefighters. Follow up: The moderator requested the submission of a proposal on the above.
- 5. Another suggested topic was prognosis systems and suppressive operations. If one can analyse the fire's behaviour, it should take into account vegetation models as everything would be valuable for suppression efforts. Thus it should also include damage and everything invested in the fire and how it compares to other circumstances. Particularly, scenarios in which the fire is uncontrollable. Follow up: Analyse fire behaviour.
- 6. With the approach to the fourth meeting, it was proposed to consider exploring design thinking technologies. According to the speaker, this method simplifies the process of concluding and identifying priorities versus just debating. The moderator recognised the initiative to be considered in the future. In the present climate, it was preferable to continue with the current methodology.
- 7. Another suggestion in terms of fire concerns was the Latin American group must give alternatives to fire management. 90 per cent of the country's fires and burns are related to agricultural and livestock husbandry. There was interest to incorporate a special topic linked to prevention or analysis of these



- circumstances that allow for the supply of several options. The moderator confirmed it would be very useful and can be adapted as the presentations have mentioned this issue frequently. Follow up: Prevention or analysis. How can countries manage soil without utilising fire, ie to renew pasture? Proposing non-fire alternatives to the use of fire.
- 8. Dr Steil broached on publications on Prevention available in Spanish and Portuguese. She further noted Brazil had two projects, one in Portuguese and Italian and one in Spanish. She encouraged the group to share publications with Ecuador. Follow up: All papers that need to be shared can be done so via the program's website.
- 9. Ideas were raised about the usage of remote sensors for hotspots. It is critical to include the topic since identifying hotspots has constraints. Satellites are used by the majority of the countries. In the local scenario, the satellites have a temporal resolution of 10 minutes and a spatial resolution of more than two kilometres. As a result of the latest satellite upgrades, more robust satellites for detecting hotspots may be available. There is additionally a need to close some data surveying gaps, such as the presence of clouds and the periods when satellites pass over exact spots on the earth's surface. NASA is funding a project for a worldwide product that will include this data. It was identified as an intriguing technology that would be beneficial as spatial resolution increases in the future. Follow up: Incorporate activities on the usage of remote sensors for hotspots. Investigate ways to include these new satellites, including the NASA project.
- 10. Colombia addressed the technical and feasibility issues. When the information is available, and for those just starting, structuring data is a big problem. In the presentation, one could discuss the technicalities of building it, as well as the costs of sustainability and maintenance, which depend on the organisation managing the system. The first thing to know is how much it is worth based on the type of image that will be used to buy information. One concerns the monetary system. Colombia wishes to build its system. It relates to system operations as well as feasibility. One needs to hear how it will be set up and maintained. Another feature that countries in the region have already expertise in is integrated fire management. In Colombia, integrated fire management is currently updating different planning tools, such as the social responsibility tools for forest fire prevention, and the national plan would apply to forest fire management in this case. It is crucial to acquire expertise in integrated fire management, so that the planning aspects can be presented in the short term, long term. In addition on how to work and deal with them with limited capacities. One must consider what will happen when the country starts to develop controlled fires, which will require a significant level of skills and support. Especially, if Colombia prefers to offer courses on fire management and the application of technology at that time.
- 11. Ms Daniella proposed initiating the presentation of the monitoring system. The suggestion was online agenda, and the ability to display a fire panel to everybody. It might be organised as monthly meetings with monthly presentations. There is no need to wait until the March meeting. The moderator was in agreement. He noted the bilateral meetings are already in place, and it is simple to hold online meetings. Therefore one could organise a work plan that included an online presentation of the systems in different nations. Follow up: Organised by Ms Daniella as monthly online sessions prior to the March meeting.
- 12. Brazil noted that the country had the opportunity to go through the process of transforming its paradigm from a zero-fire policy to one that allows for the use of regulated burns in fire-prone environments. Consider what would happen if the country started developing prescribed fires, which would need a substantial amount of capability and assistance. So the recommendation is to examine the process that Brazil began in 2013-2014, which is still ongoing since it is a lengthy process, and how it has evolved with Ecuador. Fire management is one of the ways for comprehensive fire control included in the definition.
- 13. The two-vision approach in certain countries was addressed. Politically there's a lot of resistance against prescribed fires and there are people who are in favour. A way of changing this is through international agreements. Therefore, it was proposed that an international agreement in partnership with the European Union should be considered. There is interest in starting, as it is identified as one of the



best strategies to reduce damage in the affected areas. It could include the topic of integrated file management. Follow up: It seems a good idea. The first thing to carry out is to make recommendations as the expert group as experts with the support of the European Union FAO, UNEP. An unofficial document can be developed and used by each countries.

- 14. There was confirmation that Integrated fire management is a lot more. It includes data analysis, knowledge exchanges, preparedness, capacity building and restoration. It includes prescribed fires and burns but it's more than that. Follow up: When referring to integrated fire management it should include prescribed burns.
- 15. In terms of the Equatorial experience, it was noted that the country was fortunate in terms of integrated fire management. The triangles are present, and the governance scenario, as well as public policies, are taken into account. Ecuador would have a separate law dealing with the use of fire in four or five instances. It was noted that Integrated fire management is a lot more than that. When Ecuador had suppression actions inclusive of scientific objectives, it allowed commencing the initiatives with the Ministry of Environment in Ecuador. The objective was to consider several variables. Ecuador must train the employees and staff with whom there will be collaboration on fire management and generating managers. Ecuador must have a system of integrated fire control, based on the concept of working stakeholders. Some use scenarios for decision making and there should be an easier way to use fire and include more countries. The negative aspect of fire should be balanced with the management of natural resources. It was additionally noted that a paper on integrated fire management was presented earlier at a conference in Rome. Peru, Ecuador, and other FAO members provide excellent opportunities for nations to collaborate on a national and worldwide scale. He noted that fire, like water and soil, must be regulated.
- 16. It was highlighted that the subject of fire has been on the table for the last four or five years, including in Uruguay where it was previously hosted. An appeal was made to prepare for June. The topic of fire and progressive discussion involving all countries was an area that required more prominence. For the past 20 years, this subject has been brought up repeatedly. FAO and the nations where FAO produce crisis analysis for fire control created a variety of publications, activities, and initiatives. The 5Rs were mentioned, and additional ideas were proposed as well. Everything is connected to fire. A question raised to all delegates was what areas countries would like to address with integrated fire control. Follow up: Is the subject on Fire to be actively reviewed before the June meeting?
- 17. Mexico informed that FAO had established operational regional networks, which provide for the organisation and help in the prioritisation of certain objectives. Mexico has some Choto people, and Ceso Robles confirmed the integrated Farm Management Programme will be part of the regulation starting in 2018. A concern addressed was the lack of action on fires. He stressed the need for action while learning from previous mistakes.
- 18. Ecuador noted that it had held a meeting with indigenous leaders to explore traditional knowledge and its relationship to environmental challenges. Two months later, the first fire broke out throughout the country. The fire management spaces that become more evident in the coming months may be something to consider. In December of last year, there was increased collaboration. It would be an excellent spot for everyone to consider and ascertain how integrated fire control is handled in Brazil and Ecuador. A few adjustments may be necessary before it may be implemented in Colombia. He proposed consulting indigenous leaders in communities, knowing what they're doing, and talking to women and children is critical. It was noted that Ecuador includes 96 habitats, the majority of which are forest systems. Each country's environment has its unique characteristics and fire acts differently in each place. Follow up: Potentially to be addressed as group activities
- 19. It is critical to emphasise a point stated at the second summit in Chile. A particular private enterprise that presently works at the national level, was interested to collaborate with GEFF LAC, as it also provides services for aerial forest fire fighting. Because the country has been on a learning curve, there may be a chance to organise training via the GEFF LAC expert group. Even though the crews are faultless, many of the crews are not as successful as they should be, according to government air



operations coordinators. Furthermore, there is a need to learn more about resource optimisation, which is why an appeal request training programme is being presented on this issue. He noted that forest fires can be controlled. Follow up: Programme on Aerial fire fighting

20. The moderator noted that JRC work can be adopted by member states as part of the Europe effort for Amazon. Training may be organised to pick a nation that can host the other countries for the training. Examples of collaboration with Ms Ileana Fernandez and Angela from the Spanish Cooperation Agency, as well as the Italian Cooperation Agency were presented. The moderator further drew from his experience at the international conference on operational criteria for aircraft operations in both Korea and Brazil in 2019. He cited the special group discussing issues and related progress with the processes. He recommended for anyone seeking information on this subject visit the event, before the next one in Portugal. All participants were thanked for their participation. On the organisational front, the presentations provided, as well as event images, a survey, and various documentation, will be made available to all delegates. Delegates who presented in Chile were asked to re-submit all of their presentations since a technological issue had erased some of them. There are reports on forest fire control that will be distributed to all delegates in due course. Furthermore, all delegates were requested to take two copies of each publication.

SESSION 4: CONCLUSION & CLOSING REMARKS

CLOSING REMARKS BY: DR JESÚS SAN-MIGUEL-AYANZ

Dr Jesus San-Miguel-Ayanz thanked Mrs Flavia and the PrevFogo/IBAMA team on behalf of the European Union for all their efforts in organising the conference. He noted that the two days were valuable and helped everyone network better. He mentioned that the expert group generated a wealth of ideas requiring better coordination efforts. Everyone appreciated the efforts and enthusiastic commitment. He further thanked Ms Krishana, Simona and team members and commended the teams for all their hard work behind the scenes. He affirmed that they are excellent technical support. Members and colleagues from Mexico, Chile, Brazil, Peru and Spain who attended from afar were recognised and thanked for their commitment. In conclusion, re-iterated that dialogue and networking will continue.

CLOSING REMARKS BY: FAO

On behalf of FAO, it was encouraging to see a group of experts coming together and developing issues that could be valuable in achieving results. Having worked in Rome years ago in a firefighting office and on returning to the country it was encouraging to see efforts directed towards firefighting. He reinstated that results can only be achieved through collaboration, and it was essential to achieve the result. It was further stressed that these spaces were not for FAO or the European Union. Instead, they were for the experts on the ground and FAO's role was to facilitate the work of the group. The main objective was to ensure inclusive participation. Finally, he thanked Brazil for organising the beautiful space.

CLOSING REMARKS BY: MS FLAVIA SALTINI LEITE, PREVFOGO

Ms Saltini, in her concluding message, thanked all delegates on behalf of Prevfogo and the IBAMA administration. The administration was pleased to learn about the selection of Prevfogo as the venue. She noted that the only way is to cooperate and coordinate with other countries and articulation in environmental protection with all its implications. It would lead to not only impacting one country but the world. Therefore, she stressed the importance of increased cooperation and mutual support to achieve sustainable growth and harmony on both the environmental and economic fronts. She reinstated that countries must work together as it is the only way to achieve the agreed goals and put the protocols into practice. She confirmed that it was a pleasure to participate in the event and pointed out that all participating countries were on the path to further progress and development. She noted that many points align and countries can harmonise procedures where work is optimised. She hoped the European Union would consider continued support to Prevfogo/IBAMA in promoting professional contacts, especially in the areas mentioned. Specifically, the



geo-referencing of systems because governments are building up a backlog of work. She expressed that it was crucial to maximise the efforts of all interested in this meeting. Therefore, she noted that the help of the European Union was critical to achieving it.

Ms Saltini further noted that all countries interested in learning more about the systems are encouraged to partner, integrate and present the ongoing developments. She also added that there is a possibility to develop cooperation if countries choose to cooperate with Prevfogo/IBAMA in this process. In Brazil, no task is executed alone. Prevfogo/IBAMA has staff to work on inter-agency issues, including Mr Govinda Terra, Ms Marianna Lawrence and Ms Martha Leiva, whose contact information were shared. She additionally proposed another item that was outside the scope of the conference but worth mentioning for the goal of sowing a seed. It was to consider collaborating in creating educational materials that use country mascots. The presenter highlighted the significant similarities in countries on forest fires, climate change and causes. It is common knowledge that fires and their impacts know no borders. Therefore, she requested partner countries to consider creating mascots to illustrate unity in achieving common goals. Ms Saltini also affirmed that it was welcoming to cooperate on such an important event. The PrevFogo/IBAMA building design encourages

CLOSING REMARKS BY: MS SIMONA OBREJA

Ms Simona Obreja concluded the day's proceedings by saying a few words of gratitude and appreciation to Dr Jesus San-Miguel-Ayanz and Miguel, the project organisers, without whom none of the delegates would be there. She noted that the planning has been going on for a year and a half. Dr Jesus San-Miguel-Ayanz united the group and formulated the strategy for 2023. As a result, the team in Europe, Amazon, and the project will continue until 2027. A hand of applause was sufficient to end. It concluded the two days on the dialogue of Forest Fires.